

IN THE CLAIMS

1. (Currently Amended) Composite of polymer or ceramic material for the manufacture of components used in biological implants, the composite with a content of integrated reinforcing elements in the form of fibers or fibrous parts comprising

a) materials that do not absorb substantial amounts of X-rays; and

b) X-ray absorbing reinforcing fibers wherein individual fibers are distributed within the composite so that a majority of the fibers do not contact each other, for the manufacture of components exposed to tensile, bending, shear, compressive and/or torsional stress for use in implants, e.g., osteosynthesis plates, endoprostheses, screw coupling elements or in surgical instruments, characterized by the fact that polymer or ceramic material incorporates at least a small percentage of the content of reinforcing elements made out of a material whose X-ray absorption is higher than that of the material of the remaining reinforcing elements.

[2. (Canceled)]

3. (Currently Amended) Composite according to claim 1, characterized by the fact that it is wherein the composite is prefabricated as a

profiled rod material comprised of thermoplastics with carbon fibers and fibers made out of a an X-ray absorbing material with a higher X-ray absorption, and can be or has been molded into a shape required for the a final component (1, 18) in a thermoforming process.

4. (Currently Amended) Composite according to claim 1, characterized by the fact that it consists of wherein the composite comprises carbon fiber-reinforced PAEK (poly-aryl-ether ketone) and a percentage of X-ray absorbing fibers made out of a material with a higher X-ray absorption.

5. (Currently Amended) Composite according to claim 1 3, characterized by the fact that wherein the carbon fibers and X-ray absorbing fibers made out of a material with higher X-ray absorption are designed as continuous fibers and/or fibers with a length exceeding 3 mm.

6. (Currently Amended) Composite according to claim 1, characterized by the fact that wherein the used fibers (6) are enveloped on the surface by the a matrix material both in the preform and the finished component (1, 18).

7. (Currently Amended) Composite according to claim 1, ~~characterized by the fact that~~ wherein the fibers (6) ~~or fibrous parts consist of a~~ comprise an X-ray absorbing material with a higher X-ray absorption made out of a nonmagnetic material.

8. (Currently Amended) Composite according to claim 1, ~~characterized by the fact that~~ wherein the fibers (6) ~~or fibrous parts with a high X-ray absorption consist of~~ are made from materials selected from the group comprising: tantalum, tungsten, gold, and or platinum, meaning a metal or metal ~~oxides with high attenuation coefficients.~~

B2
copy

9. (Currently Amended) ~~Component made out of a composite~~ according to claims 1 to 8, characterized by the fact that a A component made from a composite of polymer or ceramic material having X-ray absorbing reinforcing fibers distributed within the composite so that a majority of the fibers do not contact each other, wherein the ~~predictable progression and predictable quantity and orientation of the~~ reinforcing elements in the form of fibers (6) or fibrous parts made out of a material with a high X-ray absorption, are provided, is tailored to the shape and application of the component (1, 18).

10. (Currently Amended) Component according to claim 9, characterized by the fact that wherein areas of differing fiber orientation or fiber progression are provided relative to the fibers are oriented differently depending on the longitudinally or transverse oriented alignment of the component (1, 18).

B2
cont'd

11. (Currently Amended) Component according to claim 9, characterized by the fact that further comprising carbon fibers, wherein the ratio of carbon fibers to X-ray absorbing fibers or fibrous parts made out of a material with a higher X-ray absorption can be or is variable at a total fiber percentage of approx. 50 %v/v, for example, depending on the application requirement.

12. (Currently Amended) Component according to claim 9, characterized by the fact that further comprising carbon fibers, wherein the total fiber percentage in the composite remains constant over their length or width, but this changes the ratio of carbon fibers (6) to fibers (6) or fibrous parts made out of an X-ray absorbing material with a high X-ray absorption, depending on the application requirement.

13. (Currently Amended) Component in the form of a connecting element according to claim 9, characterized by the fact that wherein the stiffness of

the connecting element can be varied by varying the orientation of ~~used~~ fibers (6) from ~~the~~ a force application point toward ~~the~~ a free end of the component.

[14. (Cancelled)]

B²
C²
15. (Currently Amended) Component in the form of a strip or plate assembly part, ~~e.g., an osteosynthesis plate,~~ according to claim 9, ~~characterized by the fact that~~ wherein a concentration of fibers (6) is ~~be~~ present in the area (A) of one or more recesses (14) or holes in the component (18), and wherein the percentage of the X-ray absorbing fibers (6) ~~or fibrous parts made out of a material with a high X-ray absorption~~ is reduced in these areas, ~~if necessary~~.

16. (New) A process for forming a biocompatible medical component comprising the following steps:

B³
1) providing a prefabricated at least partially thermoplastic rod of a composite of polymer or ceramic material having X- ray absorbing reinforcing fibers wherein individual fibers are distributed within the composite so that a majority of the fibers do not contact each other; and

2) molding the rod into a shape required for the final component.

B3
C. 1
17. (New) The process of claim 16 wherein the shape is an osteosynthesis plate.

18. (New) The process of claim 16 wherein the shape is a screw coupling element.
